**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An optical filter comprising:

~~an opaque, reflective~~ a metal layer;

a dielectric spacer layer deposited on said metal layer; and

a dielectric stack of alternating relatively high and low refractive index layers deposited on said spacer layer; ~~and~~

wherein the thickness of said dielectric spacer layer and said high and low refractive index layers ~~being~~ is selected such that ~~the filter has~~ in a predetermined resonant wavelength band, radiation incident on the filter is transmitted through the dielectric stack and the spacer layer to the metal layer, and wavelengths outside the predetermined resonant wavelength band are reflected from said dielectric stack; and ~~, at which wavelength incident radiation is channeled into, and absorbed by, the metal layer.~~

wherein the metal layer is opaque to the incident radiation in said predetermined resonant wavelength band, such that the incident radiation transmitted through the dielectric spacer layer is channeled into and absorbed by the metal layer, and none of the incident radiation in said predetermined resonant wavelength band is transmitted through the metal layer.

2. (Previously Presented) An optical filter, as claimed in claim 1, wherein the dielectric spacer layer has the same composition and thickness as one of the constituent layers in the dielectric stack.

Claims 3-6. (Canceled)

7. (Currently Amended) An optical filter as recited in claim 1 wherein the spacer layer is formed from a low refractive index material and is equal to even integer multiples of a quarter-wave optical thickness, including a zero (absentee layer), and symbolically described as;

Substrate / M nL $(HL)^x$ H /ambient

where:

M is the metal layer;

n = 0,2,4,6, etc…; even integer multiples of the quarter wave optical thickness of the spacer layer; [[and]]

H and L represent quarter wave optical thicknesses respectively of the high and low refractive index layers; and [[.]]

x is an integer indicating the number of pairs of L and H layers.

8. (Currently Amended) An optical filter as recited in claim 1 wherein the spacer layer is formed from a low refractive index material and is equal to odd integer multiples of quarter-wave (optical thickness), symbolically described as;

Substrate / M nH $(LH)^x$ / ambient

where:

M is the metal layer;

n = 0,1,3,5,7,..., odd integer multiples of the quarter wave optical thickness of the spacer layer; [[and]]

H and L represent quarter wave optical thicknesses respectively of the high and low refractive index layers; and [[.]]

x is an integer indicating the number of pairs of L and H layers.

Claim 9. (Canceled)

10. (Previously Presented) An optical filter as recited in claim 1 further comprising a tiered multi-layer stacking sequence of:

Substrate / M H $(LH)^4$/ ambient

where

H and L equal one quarter-wave optical thicknesses, of relatively high and low refractive index materials, respectively, zinc sulphide and thorium fluoride.

11. (Previously Presented) An optical filter as recited in claim 1 further comprising a tiered multi-layer stacking sequence of:

Substrate / M HHH $(LH)^4$/ ambient

where:

H and L equal one quarter-wave optical thicknesses, of relatively high and low refractive index materials, respectively, zinc sulphide and thorium fluoride.

12. (Currently Amended) An optical filter comprising:

a tiered multi-layer stacking sequence of:

Substrate / M $(HL)^2$ x$H(LH)^2$/ ambient; ~~where~~

wherein:

H and L equal one quarter-wave optical thickness of relatively high and low refractive index materials, respectively, zinc sulphide and thorium fluoride, with x$H(LH)^2$ forming a multilayer stack;

M is a ~~an opaque reflective~~ metal layer; [[,]]

'x' is between about 4 through 1000; [[,]] and

$(HL)^2$ defines a spacer layer deposited on said metal layer, the thickness of said dielectric spacer layer and the multilayer stack being selected such that in a plurality of predetermined resonant wavelength bands, radiation incident on the filter is transmitted through the multilayer stack and the spacer layer to the metal layer, and wavelengths outside said plurality of predetermined resonant wavelength bands are reflected from said dielectric stack, the metal layer being opaque to the incident radiation in said plurality of predetermined resonant wavelength bands, such that the incident radiation transmitted through the dielectric spacer layer is channeled into and absorbed by the metal layer, and none of the incident radiation in said plurality of predetermined resonant wavelength bands is transmitted through the metal layer.

~~the filter has a plurality of resonant wavelengths spaced apart on a wavelength scale, at which wavelengths incident radiation is channeled into, and absorbed by, the metallic layer.~~

13. (Previously Presented) An optical filter, as claimed in claim 1 incorporating additional dielectric spacers, configured to steepen the absorption characteristic edge and so square off filter performance.

14. (Currently Amended) An ~~induced absorption~~ optical filter as recited in claim 1 configured to operate in the wavelength band 8 to 12μm.

Claims 15-16. (Canceled)

17. (Currently Amended) A laser comprising:

a laser resonator terminated by first and second mirrors, at least one of said mirrors including ~~an opaque, reflective~~ a metal layer, a dielectric spacer layer deposited on said metal layer, a dielectric stack of alternating relatively high and low refractive index layers deposited on said spacer layer, the thickness of said dielectric spacer layer and the dielectric stack being selected such that in a predetermined resonant wavelength band, radiation incident on the filter is transmitted through the multilayer stack and the spacer layer to the metal layer, and wavelengths outside said predetermined resonant wavelength band are reflected from said dielectric stack, the metal layer being opaque to the incident radiation in said predetermined resonant wavelength band, such that the incident radiation transmitted through the dielectric spacer layer is channeled into and absorbed by the metal layer, and none of the incident radiation in said predetermined resonant wavelength band is transmitted through the metal layer. ~~said high and low refractive index layers being selected such that the filter has a resonant wavelength, at which wavelength incident radiation is channeled into, and absorbed by, the metal layer.~~

18. (Currently Amended) A laser comprising:

a laser resonator terminated by first and second mirrors, at least one of said mirrors including a tiered multi-layer stacking sequence of Substrate / M $(HL)^2$ $xH(LH)^2$/ ambient, where H and L equal one quarter-wave optical thickness[[,]] of relatively high and low refractive index materials~~, respectively,~~ zinc sulphide and thorium fluoride, respectively, with $xH(LH)^2$ forming a multilayer stack, M is an opaque reflective metal layer, 'x' is between about 4 through 1000, and $(HL)^2$ defines a spacer layer deposited on said metal layer, the thickness of said dielectric spacer layer and the multilayer stack being selected such that in a plurality of predetermined resonant wavelength bands, radiation incident on the filter is transmitted through the multilayer stack and the spacer layer to the metal layer, and wavelengths outside said plurality of predetermined resonant wavelength bands are reflected from said dielectric stack, the metal layer being opaque to the incident radiation in said plurality of predetermined resonant wavelength bands, such that the incident radiation transmitted through the dielectric spacer layer is channeled into and absorbed by the metal layer, and none of the incident radiation in said plurality of predetermined resonant wavelength bands is transmitted through the metal layer.

~~and the filter has a plurality of resonant wavelengths spaced apart on a wavelength scale, at which wavelengths incident radiation is channeled into, and absorbed by, the metal layer.~~

Claims. 19-24. (Canceled)